Econ 311: Behavioral and Experimental Economics

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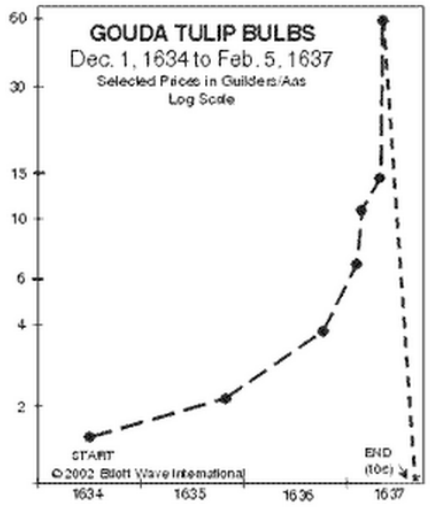
Markets

Motivation: Market for Tulips

- You are a merchant in 17th century Holland
- Holland is well known for producing beautiful tulip flowers
- You are absolutely sure that tulips will be very popular next year, and sell for twice this year's price
- What should you do?
- What happens to the market price for tulips?
- What will happen to the price of tulips eventually?

Tulipmania



Asset Price Bubbles

- Has this happened in modern financial markets?
- How can we differentiate bubbles and rational price changes?
- What factors might limit price bubbles?

A Slight Digression: Present Value

- Suppose there are two periods:
  - In period 1, you and a bunch of other people have the option buy an asset
  - In period 2, that asset pays you some amount of money V
- There is an interest rate r, meaning if you have cash m today you can put it in the bank and get out $m(1+r)$ dollars tomorrow
- What price P makes sense as the market price for the asset?

Present Value, cont

- Claim: price should be $P = \frac{V}{1+r}$
  - Suppose $P > \frac{V}{1+r}$
    - Instead of buying the asset, you all could just leave that P dollars of your cash in the bank, earning $P(1+r) > V$
    - This lack of demand would drive down price
  - Suppose $P < \frac{V}{1+r}$
    - At this price, everyone empties their bank accounts to buy as much of the asset as they can
    - This frenzied demand would drive up price
  - Thus $P = \frac{V}{1+r}$ is the only stable price for the asset
  - This is called the *present value* of the asset

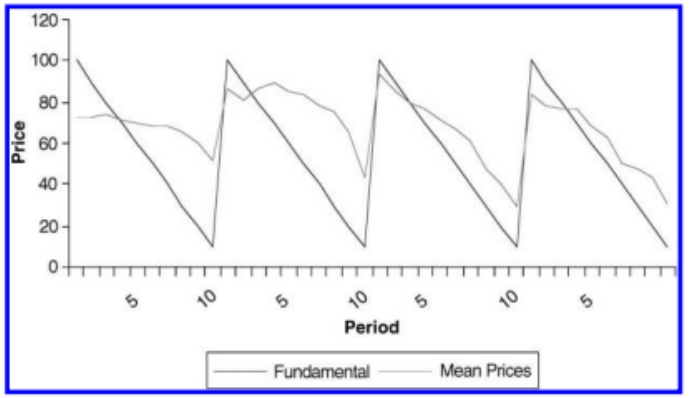
Analyzing Our Market Exercise

- Let's work backward from the last period
- Asset pays you \$7.00 in last period plus an expected dividend of \$0.70, so asset price should be \$7.70
- In second-to-last period:
  - Asset will be worth \$7.70 in one period, so present value is $\frac{\$7.70}{1.1} =$ \$7.00 today
  - However, also pays you \$0.70 in expected dividend this period, which is not discounted
  - Thus you should be willing to pay \$7.70 as well this period
- In fact, the price *every* period should be \$7.70
- What actually happened in our market?

Does Experience Alleviate Bubbles?

- In Dufwenberg et al, "Bubbles and Experience: An Experiment", authors run experiment similar to our classroom exercise
- Two important differences:
  - 4 consecutive markets of 10 rounds each
  - In each market, risk-neutral fundamental value of asset is *decreasing* rather than constant
    - Achieve this by having large dividend and low redemption value
- Main question: does the market price track the predicted price as traders become more experienced?

Experience: Results



Does Information Alleviate Bubbles?

- M. Sutter et al, "Bubbles and Information: An Experiment"
- Total of 6 traders in market
- Three conditions:
  1. Control: no traders have any info on future dividends
  2. Info: all traders know period next dividend amount
  3. Insider:
     - Two traders know dividend for next *two* periods
     - Two traders know dividend for next period
     - Two traders are uninformed

Information